Intellectual Property Office

BLO/00004/23

04th January 2023

PATENTS ACT 1977

APPLICANT	Individual Bust Group Limited
ISSUE	Whether patent application GB1607652.3 complies with sections 1(1)(a) and 76(2) of the Patents Act 1977
HEARING OFFICER	Phil Thorpe

DECISION

Introduction

1 Patent application GB1607652.3 has a filing date of 3rd May 2016 and was published as GB 2551691 A on 3rd January 2018.

2 Despite numerous rounds of correspondence between the applicant and examiner, the applicant has been unable to satisfy the examiner that the application has met the requirements of the Act. In particular, the examiner is of the opinion that the claimed invention lacks novelty.

3 In their letter of 17th October 2022, the examiner offered the applicant the opportunity for their application to be considered by a Hearing Officer. The applicant responded on 24th October 2022 by filing amended claims and an accompanying letter (dated 20th October 2022) requesting that their application be put forward to a Senior Officer for a fresh view in light of the amended claims. The applicant subsequently confirmed by email that they would like a decision to be made based on the papers on file.

4 The examiner issued a pre-hearing letter on 1st November 2022. Although they deferred making a full assessment of the amended claims, they noted that they still consider that the claimed invention lacks novelty. The examiner also believes that the amendments add subject matter to that in the application as filed.

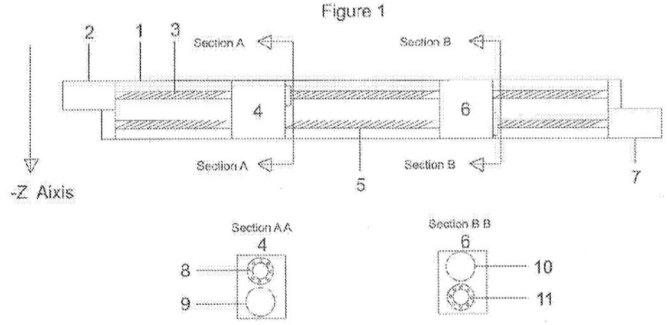
The Invention

5 The invention relates to an automated computer numeric control (CNC) machine tool comprising multiple non-synchronised carriages on a linear guide system. More specifically, the disclosed device is a three axis CNC machine provided with two carriages. Each carriage bears an independent linear

actuator fitted with a cutting motor having a cutting tool attached. Each cutting tool may be used independently and simultaneously to perform machining of a work piece.

6 Carriages 4 and 6 respectively driven by lead screws 3 and 5 can be seen in figure 1 reproduced below.

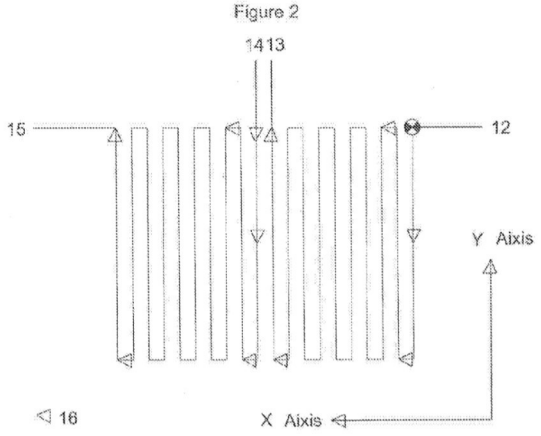
Figure 1



7 The two cutting tools carried by carriages 4 and 6 can move independently in the X axis (left and right in figure 1 above) by means of lead screws 3 and 4. They can also move independently in the Z axis (up and down in figure 1) by means of actuators not shown. The two cutting tools however move together in the Y axis (in and out of the page in figure 1).

8 Figure 2 represents example paths for the cutting tools in which carriages 4 and 6 are initially directed to points 14 and 12 respectively, before simultaneously being directed along the tool paths indicated in the X-Y plane. The linear actuators attached to the carriages operate along the Z-axis.

Figure 2



9 An extract of an example "part program" detailing movement of the carriages and cutting tools is provided on page 3 of the description and reproduced below. The data is presented as a five-axis data set, wherein the two carriages a and b may each take a separate individual position on the X axis, represented by X_a and X_b, but are restricted to taking the same position on the Y axis. Z_a and Z_b represent the positions of the cutting tools in the Z direction, determined by the independent linear actuators attached to the carriages.

1	G01	Xa 200	Xb 0	Y 0	Za 0	Zb 0
2	G01	Xa 200	Xb 0	Y 50	Za -10	Zb -12
3	G01	Xa 200	Xb 0	Y 100	Za -12	Zb -15
4	G01	Xa 200	Xb 0	Y 150	Za -15	Zb -20
5	G01	Xa 200	Xb 0	Y 200	Za -18	Zb -25
6	G01	Xa 200	Xb 0	Y 250	Za -15	Zb -30
7	G01	Xa 200	Xb 0	Y 300	Za -12	Zb -25
8	G01	Xa 200	Xb 0	Y 350	Za -10	Zb -12
9	G01	Xa 200	Xb 0	Y 400	Za 0	Zb 0
10	G01	Xa 220	Xb 20	Y 400	Za 0	Zb 0

10 The claims under consideration were filed 24th October 2022. These read as follows:

> Claim 1. A device for operating in three dimensions wherein two or more material removing units arranged axially each traversing in two dimensions individually.
>
> Claim 2 as claimed in claim 1 Each units control commands are combined together

Added subject matter

11 The examiner notes in their pre-hearing letter that the amendments to claim 1 appear to add subject matter that was not present in the application as filed.

12 Section 76(2) of the Act states that:

> No amendment of an application for a patent shall be allowed under section 15A(6), 18(3) or 19(1) if it results in the application disclosing matter extending beyond that disclosed in the application as filed.

13 Guidance on section 76 has been provided in Richardson-Vicks Inc's Patent[1] where Jacob J (as he was then) noted:

> "The test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification."

and in Bonzel and Schneider[2], where Aldous J (as he was then) stated:

> "The decision as to whether there was extension of disclosure must be made on a comparison of the two documents read through the eyes of a skilled addressee. The task of the court is threefold:
>
> (1) To ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application.
>
> (2) To do the same in respect of the patent as granted.

[1] Richardson-Vicks Inc.'s Patent [1995] RPC 568
[2] Bonzel and Schneider (Europe) AG v Intervention Ltd [1991] RPC 553

(3) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition. The comparison is strict in the sense that subject matter will be added unless such matter is clearly and unambiguously disclosed in the application either explicitly or implicitly."

14 The original version of claim 1 was directed to:

> Method and apparatus for reproducing the human head in the three dimensional form by use of non synchronised carriages within a automated linear system.

15 The examiner considers that deletion of the requirement of the device being suitable for reproducing "the human head in the three dimensional form" changes the scope of the invention to something that was not disclosed in the original application. I am not persuaded that is the case. This is because it is not at all clear what restriction is imposed by the requirement that the apparatus is suitable for reproducing a human head. There is for example nothing to indicate that this would restrict the apparatus to a particular size or that it imposes specific requirements on how the cutting heads move. Figure 4 of the application illustrates the sort of head that the machine is required to produce.

16

17 I am also satisfied that the invention as now claimed is still suitable for reproducing such human heads hence there is no added matter.

18 The examiner also notes in their pre-hearing letter that amended claim 1 is not limited to the use of non-synchronised carriages within an automated linear system, but instead now refers to "two or more material removing units arranged axially each traversing in two dimensions individually". The examiner considers that this wording does not necessarily mean that the removing units are non-synchronised, which they consider to be a feature required by the application as filed.

19 Again, I am not persuaded there is a problem here. What the application discloses is clearly apparatus which has the ability to move the cutting heads independently of each other in two dimensions. This is what the skilled person would have understood the applicant to be referring to when they referred to "non synchronised carriages". The wording of the revised claims merely makes this clearer.

20 In conclusion, it is my view that amended claim 1 of 24th October 2022 does not extend the disclosure of the application beyond that originally filed.

Novelty

21 The examiner has raised an objection under section 1(1)(a) of the Patents Act 1977 that the invention defined in the claims is not new.

22 Section 1(1) states (with added emphasis): A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say-

> (a) The invention is new;
>
> (b) it involves an inventive step;
>
> (c) it is capable of industrial application;
>
> (d) the grant of a patent for it is not excluded by subsections (2) and (3) or Section 4A below;

23 Section 2 sets out the meaning of 'new', as follows:

> (1) An invention shall be taken to be new if it does not form part of the state of the art.
>
> (2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.

24 Three prior art documents are considered by the examiner to anticipate amended claim 1. Document WO 2013/041405 A2 (FICEP S.P.A.) was filed on 11th September 2012 and published on 28th March 2013, document US 2002/0009343 A1 (UETAKE et al.) was filed on 10th September 1999 and published on 24th January 2002, and document DE 4405214 A1 (NORRA) was filed on 18th February 1994 and published on 25th August 1994.

25 FICEP is concerned with a machine comprising working heads for working three-dimensional profiles. The machine has at least two working heads, each comprising a tool for drilling, punching, writing, bevelling or milling. Three working heads, 2a, 2b and 2c, working on metallic profile 3 are shown in figure 1, which is reproduced below.

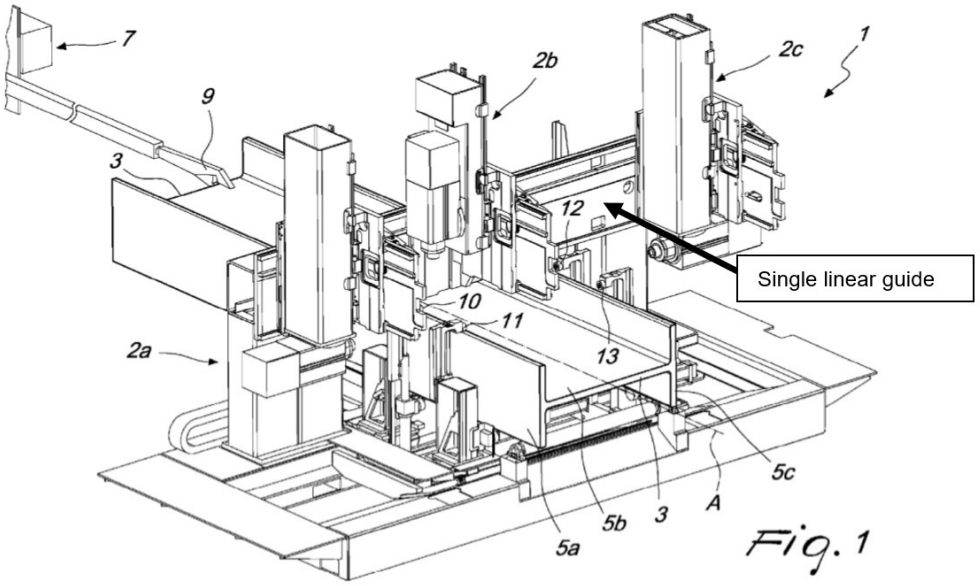


Fig. 1

26 FICEP teaches that the machine comprises 'a device for the simultaneous management of the movement of the working heads which is adapted to move each one of such heads independently and simultaneously for the respective working of a different surface of a three-dimensional metallic profile', and further teaches that the device 'is adapted to simultaneously manage the movement of each one of the heads 2a, 2b, 2c with respect to at least one of three axes which are perpendicular to each other'. A described advantage of the machine is that it is 'possible to manage several different forms of working…completely independently and simultaneously'.

27 The three-dimensional profile being worked typically has a section that is H-shaped, C-shaped or U-shaped. The machine further comprises a device 7 for translational motion of the profile along its longitudinal axis, the device comprising a clamp 9 for engaging the profile. In one mode of operation, the device may move the profile in discrete steps, with the heads disengaging prior to movement of the profile and re-engaging following the movement. Alternatively, movement of the working heads can occur simultaneously with translational motion of the profile.

28 The examiner asserts in their examination report of 17th October 2022 that the working heads are mounted to a single linear guide, indicated by the annotation added to figure 1 above. Although this feature does not seem to be explicitly referred to in the description of FICEP, I agree that a single linear guide is shown and that this guide restricts the working heads to moving axially.

29 The examiner further suggests in their examination report of 17th October 2022 that 'the working heads are each capable of moving in the x, y and z axes'. The applicant disagrees, asserting in their letter dated 20th October 2022 that 'the carriages of the working heads 2a, 2b & 2c are to linearly move the working heads in two dimensions…through the X and Y axis' and that 'there is no prime

mover for the Z axis'. The applicant also states in their letter dated 24th September 2022 that 'it is the work piece that provides for the third dimensional action'. Whilst the applicant is indeed correct in that movement of the workpiece through the machine is facilitated by the clamp 9, I am also satisfied that the working heads also have independent motion in the longitudinal direction of the workpiece (the Y axis). This is discernible from the drawings taken with the references in the description to movement in three dimensions.

30 Hence FICEP discloses a device for operating in three dimensions wherein two or more material removing units are arranged axially each traversing (at least) two dimensions individually, thus anticipating claim 1. the control commands in FICEP can also be combined hence it discloses the features of claim 2.

31 UETAKE describes a machine tool having two spindle heads that are independently movable in three mutually perpendicular axis directions. Figures 1, 2 and 3 are reproduced below, with figure references including spindle saddle 18, 18' spindle head 30, 30', tool spindle 32, 32' and cutting tool 33 and 33'. The tool spindles are each movable in three mutually perpendicular directions: the lateral direction (X-axis direction) by lead screws 5 and 5', the up and down direction as shown in figure 1 (Y-axis direction) by lead screws 22 and 22' and thin and out direction (Z-axis direction) by lead screws 14 and 14'.

FIG. 1

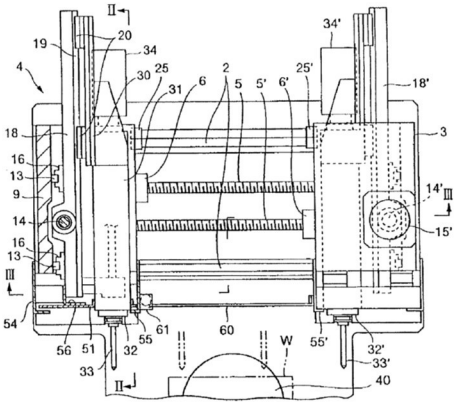


FIG. 2

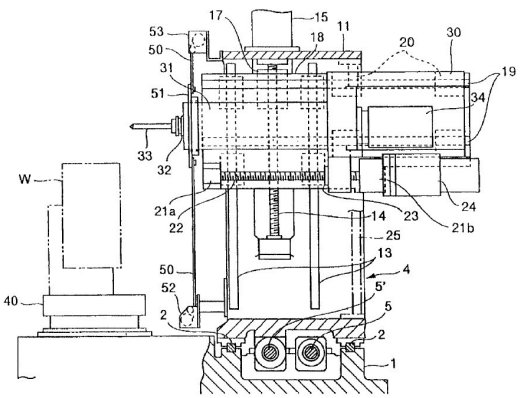
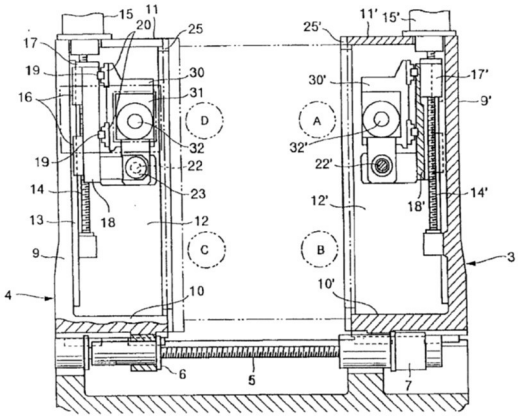


FIG. 3



32 A pair of guide rails 2 form a linear guide support along which both carriages move in a lateral direction (an X-axis direction). I consider therefore that the carriages are arranged axially.

33 The applicant states in their letter dated 24th September 2022 that the tool spindles 'have their own separate guide rails for two dimensional movement' by means of feed screws 22 & 22' and 14 & 14' and that 'the third dimension is the setting of the distance between the two spindles'.

34 I do not dispute that however it is important to understand what the claims require. Claim 1 for example requires that the device can operate in three dimensions which the apparatus in UETAKE is clearly able to do. Further UETAKE discloses two material removing units 33 and 33' which are arranged to traverse individually in two dimensions. As with the embodiment in the application they are also able to move individually in the X direction. As such UETAKE discloses all the features of claim 1. I would note that the applicant suggests that device in UETAKE would not be operable as in certain cutting configurations it might tilt off the guide rails 2. I am not convinced it would not least because the lead screws would ensure contact with both guide rails is maintained.

35 That the control commands in UETAKE can also be combined also means it discloses the features of claim 2.

36 NORRA discloses a CNC milling machine. Figure 1 shows tools 10 & 11 arranged to move in the X, Y and Z directions.

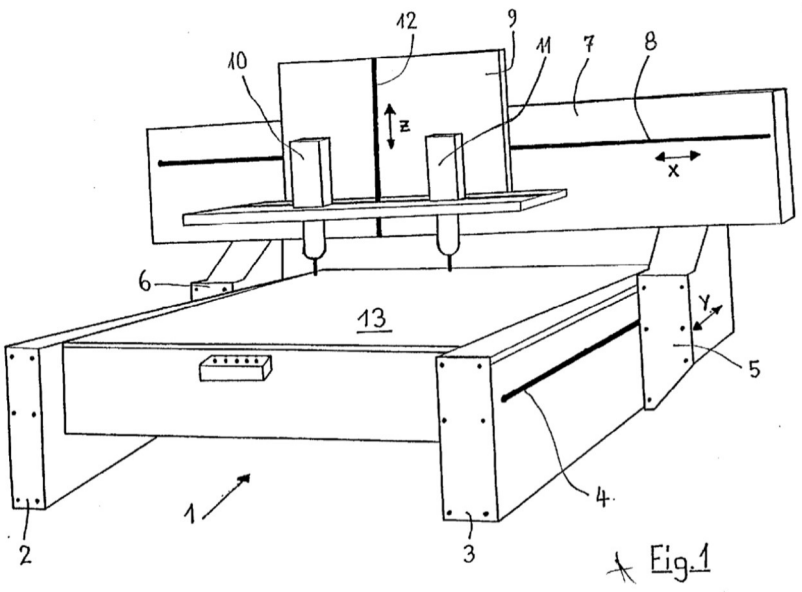


Fig.1

37 Figure 2 shows spindles 14 & 15 for moving the tools in the X direction in much the same way as the particular embodiment in the application in issue. To my mind, it is clear that the tools are arranged axially. Again, as with the particular embodiment, figure 2 shows the two cutting heads sharing the same movement

in the Y axis.

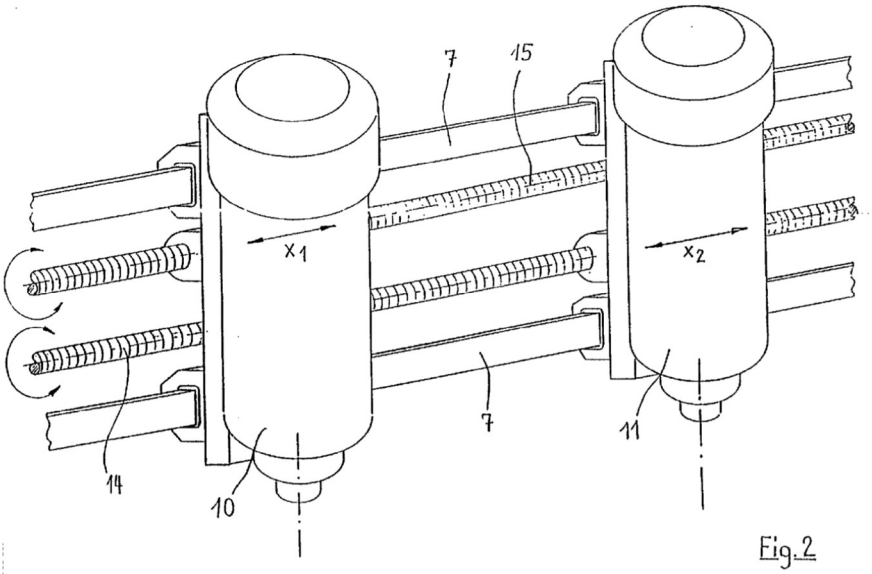


Fig.2

38 The examiner notes in their examination report of 17th October 2022 that a machine translation of NORRA states that 'a machine tool of the type mentioned is characterized in that when two tools are arranged, each of these tools is assigned a separate X spindle, so that the tools can be controlled independently of one another in the X axis, preferably in mirror symmetry movement', asserting that the carriages (tools) 10 & 11 are 'arranged to work independently and simultaneously'.

39 I note from the machine translation that the machine tool is primarily arranged for machining workpieces having an axis of mirror symmetry. As such it is possible to have a single motor driving the lead screws 14 and 15. In such embodiments the tools would not be moving independently of each other however as noted the description of NORRA suggests that such independent movement is a possible alternative.

40 However, NORRA does not appear to clearly disclose the feature of the tools being movable in two dimensions individually as movement in both Y and Z directions is the same for both tools.

41 I do not consider therefore that NORRA anticipates claim 1.

Conclusion

42 Having carefully considered all the papers on file, I conclude that the amended claim 1 of 24th October 2022 does not extend the disclosure of the application beyond that originally filed.

43 I conclude however that the amended claims 1 and 2 are anticipated by document WO 2013/041405 A2 (FICEP S.P.A.) and by document US 2002/0009343 A1 (UETAKE et al.). It is my view that amended claim 1 is not anticipated by document DE 4405214 A1 (NORRA).

44 Since there does not appear to be the basis for a saving amendment, I therefore refuse the application under section 18(3).

Appeal

45 Any appeal must be lodged within 28 days after the date of this decision.

Phil Thorpe

Deputy Director, acting for the Comptroller